

Abstract

The present invention relates to a method for characterizing samples having fluorescent particles, comprising the steps of:

(a) monitoring intensity fluctuations of fluorescence emitted by the particles in at least one measurement volume by detecting sequences of photon counts by at least one photon detector,

(b) determining from the sequences of photon counts intermediate statistical data comprising at least two probability functions, $\hat{P}_1(n_1), \hat{P}_2(n_2), \dots$, of the number of photon counts, n_1, n_2, \dots , detected in different sets of counting time intervals,

(c) determining from said intermediate statistical data a distribution of particles as a function of at least two arguments, wherein one argument is a specific brightness of the particles, or a measure thereof, and another argument is a diffusion coefficient of the particles, or a measure thereof.